

WHAT IS CLAIMED IS:

1. A reinforced cement panel, comprising:

a core layer of cementitious material ; and

5 a first layer of a reinforcement fabric disposed adjacent one side of said core layer of cementitious material, wherein said first layer includes plural weft yarns that cross plural warp yarns, and wherein at least some of said weft yarns and said warp yarns are at least partially made of nucleated polypropylene fibers.

10 2. The reinforced cement panel as recited in claim 1, further including a second layer of reinforcing fabric adjacent an opposed side of said core layer of cementitious material.

15 3. The reinforced cement panel as recited in claim 1, wherein said weft yarns and said warp yarns are made of 100% nucleated polypropylene fiber.

4. The reinforced cement panel as recited in claim 1, wherein said reinforcement fabric is bi-directional.

20 5. The reinforced cement panel as recited in claim 3, wherein said weft yarns and said warp yarns are disposed at 4 to 18 ends per inch.

6. The reinforced cement panel as recited in claim 1, wherein said weft yarns and said warp yarns are in a denier range from approximately 150 to 2000 denier.

7. The cement panel as recited in claim 1, wherein said reinforcement fabric is  
5 tri-directional.

8. The cement panel as recited in claim 7, wherein said reinforcement fabric has a fabric construction of 4 to 18 ends per inch in the warp direction and between 2 x 2 and 9 x 9 ends per inch in the weft direction.

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9. The cement panel as recited in claim 1, wherein said weft yarns and said warp yarns are made of a combination of said nucleated polypropylene fiber and a fiber that is selected from a group consisting of polyester carbon, polyamides, polyolefin, ceramic, nylon, fiberglass, basalt, aramid, and combinations thereof.

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10. The cement panel as recited in claim 1, wherein said weft yarns and said warp yarns are bonded by an adhesive.

11. The cement panel as recited in claim 10, wherein said adhesive is selected  
20 from a group consisting of polyvinyl alcohol, acrylic, polyvinyl acetate, polyvinyl chloride, polyvinylidene chloride, polyacrylate, acrylic latex, styrene butadiene rubber, and plastisol.

12. The cement panel as recited in claim 1, wherein said first layer and said second layer of said reinforcement fabric are overlapped at the edges of said core layer.

13. The reinforced cement panel as recited in claim 1, wherein said nucleator  
5 compound is selected from the group consisting of p-MDBS, 2,4,5-TMDBS, DBS, NA-11, NA-21, disodium [2.2.1]heptane bicyclocarboxylate, and any mixtures thereof.

14. The reinforced cement panel as recited in claim 1, wherein said nucleator compound is sodium benzoate.

10 15. The reinforced cement panel as recited in claim 1, wherein said nucleator compound is 3,4-DMDBS.

16. A reinforced cement panel, comprising:  
15 a core layer of cementitious material; and  
a first layer of a reinforcement fabric disposed adjacent one side of said core layer of cementitious material, wherein said first layer each includes plural weft yarns that cross plural warp yarns, and wherein at least some of said plural weft yarns are made of nucleated polypropylene fibers and said plural warp yarns made of a second  
20 fiber.

17. The reinforced cement panel as recited in claim 16, further including a second layer of reinforcing fabric adjacent an opposed side of said core layer of cementitious material.

5 18. The reinforced cement panel as recited in claim 16, wherein said second fiber is selected from a group consisting of polyester, polyamides, polyolefin, ceramic, nylon, fiberglass, basalt carbon, aramid, and combinations thereof.

10 19. The reinforced cement panel as recited in claim 16, wherein said reinforcement fabric is bi-directional.

20. The reinforced cement panel as recited in claim 16, wherein said reinforcement fabric is tri-directional.

15 21. The reinforced cement panel as recited in claim 16, wherein said nucleator compound is selected from the group consisting of p-MDBS, 2,4,5-TMDBS, DBS, NA-11, NA-21, disodium [2.2.1]heptane bicyclodicarboxylate, and any mixtures thereof.

20 22. The reinforced cement panel as recited in claim 16, wherein said nucleator compound is sodium benzoate.

23. The reinforced cement panel as recited in claim 16, wherein said nucleator compound is 3,4-DMDBS.

24. A reinforced cement panel, comprising:

5 a core layer of cementitious material;

a first layer of a reinforcement fabric disposed adjacent one side of said core layer of cementitious material, wherein said first layer each includes plural weft yarns that cross plural warp yarns, and wherein at least one of said weft yarns or said warp yarns includes alternating yarns of nucleated polypropylene fiber and a second fiber.

10 25. The reinforced cement panel as recited in claim 24, further including a second layer of reinforcing fabric adjacent an opposed side of said core layer of cementitious material.

15 26. The reinforced cement panel as recited in claim 24, wherein said second fiber is selected from a group consisting of polyester, polyamides carbon, polyolefin, ceramic, nylon, fiberglass, basalt, aramid, and combinations thereof.

20 27. The reinforced cement panel as recited in claim 24, wherein said reinforcement fabric is bi-directional.

28. The reinforcement cement panel as recited in claim 26, wherein said reinforcement fabric is tri-directional.

29. The reinforced cement panel as recited in claim 22, wherein said nucleator compound is selected from the group consisting of p-MDBS, 2,4,5-TMDBS, DBS, NA-11, NA-21, disodium [2.2.1]heptane bicyclodicarboxylate, and any mixtures thereof.

30. The reinforced cement panel as recited in claim 22, wherein said nucleator compound is sodium benzoate.

31. The reinforced cement panel as recited in claim 22, wherein nucleator compound is 3,4-DMDBS.